We claim:

1. A method for automatically forming a feature set describing an electronic signal representing a piece of music, the method comprising:

(a) receiving the electronic signal into a computing device;

(b) performing a wavelet decomposition of the electronic signal to obtain a plurality of wavelet coefficients in a plurality of subbands;

(c) forming a histogram of the wavelet coefficients in each of the subbands;

(d) calculating an average, variance and skewness of each of the histograms;

(e) calculating a subband energy of each of the histograms; and

(f) forming the feature set such that the feature set comprises the average, variance, skewness, and subband energy of at least some of the subbands.

2. The method of claim 1, wherein step (f) comprises forming the feature set such that the feature set comprises the average, variance, skewness, and subband energy of fewer than all of the subbands.

3. The method of claim 2, further comprising extracting timbral features from the electronic signal, and wherein the feature set further comprises the timbral features.

4. The method of claim 1, wherein step (b) comprises convolving at least part of the electronic signal with a Daubechies wavelet filter.

5. The method of claim 4, wherein step (b) is performed with less than all of the electronic signal.

6. The method of claim 1, further comprising (g) using the feature set to classify the piece of music into at least one of a plurality of categories of music.

7. The method of claim 6, wherein step (g) is performed using a multi-class classification algorithm.

8. The method of claim 6, wherein step (g) is performed using a plurality of binary classification algorithms.

9. The method of claim 8, wherein the binary classification algorithms comprise support vector machine classification algorithms.

10. A method for automatically forming a classifier algorithm for classifying a piece of music represented by an electronic signal into one or more of a plurality of musical genres, the method comprising:

(a) receiving into a computing device a plurality of classified electronic signals, each of the classified electronic signals representing a known piece of music which has already been classified into one or more of the plurality of musical genres;

(b) for each of the classified electronic signals:

(i) performing a wavelet decomposition of the classified electronic signal to obtain a plurality of wavelet coefficients in a plurality of subbands;

(ii) forming a histogram of the wavelet coefficients in each of the subbands;

(iii) calculating an average, variance and skewness of each of the histograms;

(iv) calculating a subband energy of each of the histograms; and

(v) forming a feature set such that the feature set comprises the average, variance, skewness, and subband energy of at least some of the subbands; and

(c) automatically forming the classifier algorithm from the feature sets such that the classifier algorithm properly classifies the known pieces of music.

11. The method of claim 10, wherein step (b)(v) comprises forming each feature set such that the feature set comprises the average, variance, skewness, and subband energy of fewer than all of the subbands.

12. The method of claim 11, further comprising extracting timbral features from each classified electronic signal, and wherein each feature set further comprises the timbral features.

13. The method of claim 10, wherein step (b)(i) comprises convolving at least part of the classified electronic signal with a Daubechies wavelet filter.

14. The method of claim 13, wherein step (b)(i) is performed with less than all of the electronic signal.

15. The method of claim 10, wherein the classifier algorithm comprises a multi-class classification algorithm.

16. The method of claim 15, wherein the classifier algorithm comprises a plurality of binary classification algorithms.

17. The method of claim 16, wherein the binary classification algorithms comprise support vector machine classification algorithms.

18. A device for automatically forming a feature set describing an electronic signal representing a piece of music, the device comprising:

an input for receiving the electronic signal; and

a computing device, in communication with the input, for:

performing a wavelet decomposition of the electronic signal to obtain a plurality of wavelet coefficients in a plurality of subbands;

forming a histogram of the wavelet coefficients in each of the subbands;

calculating an average, variance and skewness of each of the histograms;

calculating a subband energy of each of the histograms; and

forming the feature set such that the feature set comprises the average, variance, skewness, and subband energy of at least some of the subbands.

19. The device of claim 18, wherein the computing device forms the feature set such that the feature set comprises the average, variance, skewness, and subband energy of fewer than all of the subbands.

20. The device of claim 19, wherein the computing device also extracts timbral features from the electronic signal, and wherein the feature set further comprises the timbral features.

21. The device of claim 18, wherein the computing device performs the wavelet decomposition by convolving at least part of the electronic signal with a Daubechies wavelet filter.

22. The device of claim 21, wherein the wavelet decomposition is performed with less than all of the electronic signal.

23. The device of claim 18, wherein the computing device uses the feature set to classify the piece of music into at least one of a plurality of categories of music.

24. The device of claim 23, wherein the computing device classifies the piece of music using a multi-class classification algorithm.

25. The device of claim 23, wherein the computing device classifies the piece of music using a plurality of binary classification algorithms.

26. The device of claim 23, wherein the binary classification algorithms comprise support vector machine classification algorithms.

27. A device for automatically forming a classifier algorithm for classifying a piece of music represented by an electronic signal into one or more of a plurality of musical genres, the device comprising:

an input for receiving a plurality of classified electronic signals, each of the classified electronic signals representing a known piece of music which has already been classified into one or more of the plurality of musical genres; and

a computing device, in communication with the input for forming the classifier algorithm by:

for each of the classified electronic signals:

(i) performing a wavelet decomposition of the classified electronic signal to obtain a plurality of wavelet coefficients in a plurality of subbands;

(ii) forming a histogram of the wavelet coefficients in each of the subbands;

(iii) calculating an average, variance and skewness of each of the histograms;

(iv) calculating a subband energy of each of the histograms; and

(v) forming a feature set such that the feature set comprises the average, variance, skewness, and subband energy of at least some of the subbands; and

automatically forming the classifier algorithm from the feature sets such that the classifier algorithm properly classifies the known pieces of music.

28. The device of claim 27, wherein the computing device forms each feature set such that the feature set comprises the average, variance, skewness, and subband energy of fewer than all of the subbands.

29. The device of claim 28, wherein the computing device extracts timbral features from each classified electronic signal, and wherein each feature set further comprises the timbral features.

30. The device of claim 27, wherein the computing device performs the wavelet decomposition by convolving at least part of the classified electronic signal with a Daubechies wavelet filter.

31. The device of claim 30, wherein the wavelet decomposition is performed with less than all of the electronic signal.

32. The device of claim 27, wherein the classifier algorithm comprises a multi-class classification algorithm.

33. The device of claim 32, wherein the classifier algorithm comprises a plurality of binary classification algorithms.

34. The device of claim 33, wherein the binary classification algorithms comprise support vector machine classification algorithms.